Amendments to the Claims

Claims 1 - 52 (cancelled).

53. (currently amended) An accommodating intraocular lens constructed to be implanted and fixated within a natural capsular bag attached to a ciliary muscle of a human eye, comprising:

a uniplanar continuous surface flexible lens body having anterior and posterior sides and including a single solid flexible refractive biconvex optic with convex surfaces on each side ~~with the front and back radii being essentially the same~~, and at least two symmetrical plate haptics extending radially from the ~~lens~~ optic with their inner ends adjacent the optic and separated from the optic with a linear groove across each plate haptic tangential to the optic designed to allow the optic to move axially relative to the outer ends of the haptics, ~~the haptics having hinges adjacent the optics~~ and for facilitating maximum axial movement of the optic relative to the outer ends of the haptics, and wherein

said lens body is configured and dimensioned to be disposed in a natural capsular bag of the eye, wherein said lens body is constructed and operable to move the optic posteriorly and anteriorly toward the iris relative to the outer ends of said haptics in response to forces imparted by ciliary muscle relaxation and constriction, respectively, to provide vision accommodation.

54. (currently amended) An accommodating intraocular lens according to claim 53, wherein ~~further including~~:

the groove across each haptic comprises a hinge adjacent said haptic inner end and about which the optic moves posteriorly and anteriorly in response to forces imparted by ciliary muscle relaxation and constriction.

55. (previously presented) An accommodating intraocular lens according to claim 54, wherein:

said hinge is a reduced portion of said haptic.

56. (previously presented) An accommodating intraocular lens according to claim 55, wherein:

said haptic reduced portion forms a groove across the anterior side of said haptic.

57. (previously presented) An accommodating intraocular lens according to claim 54, wherein:

said haptic outer ends and hinges when unstressed are disposed substantially in a common plane transverse to the optical axis of said optic.

58. (withdrawn) An accommodating intraocular lens according to claim 54, wherein:

said hinge is a flexible portion of said haptic.

59. (previously presented) An accommodating intraocular lens according to claim 54, wherein:

said hinges are adapted to bias said lens body to its unstressed configuration.

60. (withdrawn) An accommodating intraocular lens according to claim 54, wherein:

said hinge is a pivot hinge about which the optic moves posteriorly and anteriorly in response to forces imparted by ciliary muscle relaxation and constriction.

61. (previously presented) An accommodating intraocular lens according to claim 54, wherein

said hinge joins said haptic inner end to said optic.

62. (withdrawn) An accommodating intraocular lens according to claim 54, wherein:

the width of said hinge transverse to the length of said lens body is less than the diameter of said optic.

63. (currently amended) An accommodating intraocular lens according to claim 54, wherein:

said optic is biconvex ~~haptics are plate haptics~~.

64. (withdrawn) An accommodating intraocular lens according to claim 63, wherein:

said plate haptics comprise an inner portion interconnecting said optic to an outer portion of said plate haptic, said haptic inner portion tapers away from said optic to a width more narrow than said haptic outer portion.

65. (previously presented) An accommodating intraocular lens according to claim 64, wherein:

the width of said haptic outer portion transverse to the length of said lens body is substantially the same as the diameter of said optic.

66. (withdrawn) An accommodating intraocular lens according to claim 64, wherein:

the width of said haptic inner portion transverse to the length of said lens body is substantially less than the diameter of said optic.

67. (withdrawn) An accommodating intraocular lens according to claim 64, wherein:

said haptic outer portion has a surface defining an opening to allow fibrosis to occur therethrough.

68. (withdrawn) An accommodating intraocular lens according to claim 64, wherein:

said haptic outer portion comprises a spring member extending from said haptic outer end, said spring member is adapted to position said lens body in the natural capsular bag.

69. (withdrawn) An accommodating intraocular lens according to claim 68, wherein:

said spring member extends laterally across said haptic outer end.

70. (withdrawn) An accommodating intraocular lens according to claim 69, wherein:

said spring member is flexible endwise to said lens body.

71. (withdrawn) An accommodating intraocular lens according to claim 68, wherein:

said spring member is adapted to spring outwardly away from said haptic outer end to impart force against the natural capsular bag to securedly position said lens body in the natural capsular bag.

72. (previously presented) An accommodating intraocular lens according to claim 53, wherein:

said haptics are flexible throughout their length.

73. (previously presented) An accommodating intraocular lens according to claim 53, further including:

at least one haptic anchor adjacent the outer end of said haptic to fixate said lens body within a natural capsular bag of the eye.

74. (previously presented) An accommodating intraocular lens according to claim 73, wherein:

said haptic anchor is integral to said haptic outer end.

75. (withdrawn) An accommodating intraocular lens according to claim 73, wherein:

said haptic anchor comprises said haptic outer end having a portion of its surface being raised, said raised surface forming a haptic shoulder.

76. (withdrawn) An accommodating intraocular lens according to claim 75, wherein:

said haptic shoulder extends outwardly from at least one of the anterior and posterior surfaces of said haptic outer end.

77. (previously presented) An accommodating intraocular lens according to claim 53, wherein:

at least a portion of said haptic outer end has a thickness greater than said haptic inner end.

78. (withdrawn) An accommodating intraocular lens according to claim 73, wherein:

said haptic anchor comprises said haptic outer end having a surface forming an opening through which fibrosis can occur to fixate said lens body in a natural capsular bag of the eye.

79. (withdrawn) An accommodating intraocular lens according to claim 73, wherein:

said haptic anchor comprises spring loops extending from the outer end of said haptics.

80. (currently amended) An accommodating intraocular lens adapted to be implanted within a natural capsular bag attached to the ciliary muscle of the human eye, comprising:

a lens body having anterior and posterior sides and including ~~a biconvex~~ an optic ~~having symmetrical~~ with convex front and back surfaces, and at least two symmetrical plate haptics extending from the optic, said haptics including inner portions having inner ends adjacent to said optic and opposite outer portions having outer ends;

~~a hinge interconnecting~~ each haptic ~~inner portion, each hinge comprising~~ having a discrete linear groove across each haptic adjacent and tangential to the optic forming a hinge to allow axial movement of the optic relative to the outer ends of the haptics; and wherein

said lens body is adapted to be disposed in a natural capsular bag of the eye, and said lens body is operable to move the optic about said hinge posteriorly and anteriorly toward the iris relative to said haptic outer ends in response to forces imparted by ciliary muscle relaxation and constriction, respectively.

81. (withdrawn) An accommodating intraocular lens according to claim 80, wherein:

said haptics are plate haptics.

said plate haptics have a width throughout their length less than the diameter of said optic.

82. (withdrawn) An accommodating intraocular lens according to claim 81, wherein:

said plate haptics have a width throughout their length less than the diameter of said optic.

83. (withdrawn) An accommodating intraocular lens according to claim 82, wherein:

said plate haptics taper in width away from said haptic inner end towards said haptic outer end.

84. (withdrawn) An accommodating intraocular lens according to claim 83, wherein:

said plate haptic tapers in thickness away from said haptic inner end towards said haptic outer end.

85. (currently amended) An accommodating intraocular lens according to claim 80, wherein:

said groove comprises a hinge connecting said haptic outer portion to said inner portion forms a groove across the posterior side of said haptic, and

the optic is biconvex.

86. (previously presented) An accommodating intraocular lens according to claim 80, wherein:

said haptic outer ends are disposed substantially in a first common plane normal to the axis of said optic, and said hinges are disposed in a second common plane normal to the axis of said optic, wherein said hinges remain anteriorly positioned relative to said haptic outer ends during ciliary muscle contraction and relaxation.

87. (withdrawn) An accommodating intraocular lens according to claim 80, wherein:

said haptic inner portion is integrally joined to said optic.

88. (withdrawn) An accommodating intraocular lens adapted to be implanted within a natural capsular bag attached to the ciliary muscle of the human eye, comprising:

a lens body having anterior and posterior sides and including an optic, said optics anterior side has a convex curvature less than the convex curvature of said optics posterior side, wherein said optic has a generally planoconvex shape;

at least two haptics extending from the optic and having inner ends adjacent to said optic and opposite outer ends, and wherein

said lens body is adapted to be disposed in a natural capsular bag of the eye, wherein said lens body is operable to move the optic posteriorly and anteriorly relative to the outer ends of said haptics in response to forces imparted by ciliary muscle relaxation and constriction, respectively.

89. (withdrawn) An accommodating intraocular lens according to claim 88, further including:

a hinge adjacent said haptic inner end and about which the optic moves posteriorly and anteriorly in response to forces imparted by ciliary muscle relaxation and constriction.

90. (currently amended) An accommodating intraocular lens constructed to be implanted in a human eye within a natural capsular bag in the eye coupled to a ciliary muscle of the eye, the lens comprising:

a uniplanar continuous surface flexible lens body having anterior and posterior sides and including a single solid flexible refractive ~~biconvex~~ optic with back and front convex surfaces ~~with the front and back radii being essentially the same~~, and at least two symmetrical plate haptics extending radially from the lens with their inner ends adjacent the optic each having a discrete linear groove across the haptic adjacent and tangential to the optic and designed to allow the optic to move axially relative to the outer ends of the haptics, for facilitating maximum movement of the optic relative to the outer ends of the haptics, and wherein

said lens ~~body~~ is configured and dimensioned to move the optic anteriorly toward the iris and posteriorly in response to forces imparted through constriction and relaxation of the ciliary muscle of the eye,

wherein the lens is constructed to enable relaxation of the ciliary muscle to effect posterior movement of the lens to cause the optic to move posteriorly and constriction of a ciliary muscle to effect anterior movement of the lens to cause the optic to move anteriorly to provide vision accommodation.

91. (previously presented) An accommodating intraocular lens according to Claim 90, wherein:

said haptics have a hinge between their respective inner and outer ends about which the haptics and optic flex in response to forces imparted through contraction and expansion of the ciliary muscle of the eye.

92. (withdrawn) An accommodating intraocular lens according to Claim 91, wherein:

said lens body is constructed of a material having an elastic memory, and said body has an unstressed configuration in which said haptics, optic and hinges are disposed substantially in a common plane.

93. (previously presented) An accommodating intraocular lens according to Claim 91, wherein:

said haptic outer ends are disposed substantially in a common plane transverse to the optical axis of said optic, and wherein said hinges are configured to define flexible zones about which said haptics and optic flex, whereby the optic moves anteriorly and/or posteriorly along the optical axis in response to forces imparted through contraction and expansion of the ciliarly muscle of the eye.

94. (previously presented) An accommodating intraocular lens according to Claim 93, wherein:

said lens body contains grooves in at least one of said body sides along the inner ends of said haptics forming flexible, reduced thickness portions of the lens body which constitute said hinges.

95. (previously presented) An accommodating intraocular lens according to Claim 90, wherein:

said haptics are flexible throughout their length in said anterior and posterior directions relative to said optic.

96. (withdrawn) An accommodating intraocular lens according to Claim 90, wherein:

said lens body is constructed of a material having an elastic memory, and said body has a normal unstressed anteriorly vaulted configuration in which said haptics extend posteriorly relative to said optic.

97. (withdrawn) An accommodating intraocular lens according to Claim 90, wherein:

said optic is offset posteriorly relative to the inner ends of said haptics.

98. (withdrawn) An accommodating intraocular lens according to Claim 90, wherein:

said optic is offset anteriorly relative to the inner ends of said haptics.

99. (previously presented) An accommodating intraocular lens according to Claim 53, wherein:

the haptics at the optic have a width the same as the optic.

100. (previously presented) An accommodating intraocular lens according to Claim 77, wherein:

said portion of said haptic outer end comprises at least one knob.

101. (previously presented) An accommodating intraocular lens according to Claim 77, wherein:

the outer ends of the haptics each comprise a pair of knobs.

102. (previously presented) An accommodating intraocular lens according to Claim 90 wherein:

the haptics have a width the same as the optic.

103. (cancelled)

104. (previously presented) An accommodating intraocular lens according to Claim 102, wherein:

the outer ends of the haptics each comprise a pair of knobs.

105. (currently amended) An accommodating intraocular lens constructed to be implanted and fixated in a human eye within a natural capsular bag in the eye attached about its perimeter to a ciliary muscle of the eye, the lens comprising:

a uniplanar continuous surface flexible lens body having anterior and posterior sides and including a single solid flexible refractive biconvex optic with back and front convex surfaces ~~with the front and back radii being essentially the~~

~~same~~, and at least two symmetrical plate haptics extending radially from the lens with their inner ends adjacent the optic designed to allow the optic to move axially relative to the outer ends of the haptics, ~~the~~ each haptics having a linear groove ~~hinges~~ adjacent and tangential to the optic for facilitating maximum axial movement of the optic relative to the outer ends of the haptics, and wherein

said lens body is configured and dimensioned to move the optic anteriorly and posteriorly in response to forces imparted through constriction and relaxation of the ciliary muscle of the eye,

wherein the lens is constructed to enable relaxation of the ciliary muscle to effect posterior movement of the lens to cause the optic to move posteriorly and constriction of a ciliary muscle to effect anterior movement of the lens toward the iris to cause the optic to move anteriorly to provide vision accommodation.

106. (currently amended) An accommodating intraocular lens constructed to be implanted and fixated within a natural capsular bag attached to a ciliary muscle of a human eye, comprising:

a uniplanar continuous surface flexible lens body having anterior and posterior sides and including a single solid flexible refractive biconvex optic with back and front convex surfaces ~~the front and back radii being essentially the same~~, and at least two symmetrical plate haptics extending radially from the lens with their inner ends adjacent and tangential to the optic and each having ~~hinges~~ a discrete linear groove across each haptic to allow the optic to move axially relative

to the outer ends of the haptics, the haptics being flexible for facilitating maximum axial movement of the optic relative to the outer ends of the haptics, and wherein the optic, a portion of a haptic outer end comprising at least one knob, and

said lens body is configured and dimensioned to be disposed in a natural capsular bag of the eye, wherein said lens body is operable to move the optic posteriorly and anteriorly toward the iris in response to forces imparted by ciliary muscle relaxation and constriction, respectively, to provide vision accommodation.

107. (currently amended) An accommodating intraocular lens wherein the lens comprises a flexible lens body having normally anterior and posterior sides, including a single solid flexible biconvex optic,

a uniplanar continuous surface flexible lens body having anterior and posterior sides and including a single solid flexible refractive biconvex optic with back and front convex surfaces ~~the front and back radii being essentially the same~~, and at least two symmetrical plate haptics extending radially from the lens with their inner ends adjacent and tangential to the optic and each having ~~hinges~~ a discrete linear groove across each haptic to allow the optic to move axially relative to the outer ends of the haptics for facilitating maximum movement of the optic relative to the outer ends of the haptics, and wherein

the lens being sized to be implanted into the capsular bag of the eye.

108. (previously presented) An accommodating lens according to Claim 107, where the lens is configured to move forward and backward relative to the outer ends of the extending haptics along the axis of the eye with ciliary muscle contraction and relaxation.

109. (previously presented) An accommodating lens according to Claim 107, where the optic is configured to move forward and backward relative to the outer ends of the extending haptics along the axis of the eye with ciliary muscle contraction and relaxation.

110. (previously presented) An accommodating lens according to Claim 107, comprising at least two haptics and where outer ends of the haptics include members to center the lens within the capsular bag.

111. (previously presented) An accommodating lens according to Claim 110, wherein the members include knobs.

112. (currently amended) An accommodating intraocular lens wherein the lens comprises a flexible lens body having normally anterior and posterior sides, including a flexible optic,

a uniplanar continuous surface flexible lens body having anterior and posterior sides and including a single solid flexible refractive biconvex optic with back and front convex surfaces ~~the front and back radii being essentially the same~~,

and at least two symmetrical plate haptics extending radially from the lens with their inner ends adjacent and tangential to the optic having linear grooves comprising hinges across each haptic to allow the optic to move axially relative to the outer ends of the haptics for facilitating maximum movement of the optic relative to the outer ends of the haptics, and wherein

the lens being sized to be implanted into the capsular bag of the eye such that contraction of the ciliary muscle causes the lens within the capsular bag behind the iris to move forward toward the iris with its contraction.

113. (previously presented) An accommodating lens according to Claim 112 wherein the lens is sized such that in use it will not be in contact with the ciliary muscle through the capsular bag wall.

114. (previously presented) An accommodating lens according to Claim 112 wherein the lens can move anteriorly and posteriorly.

115. (previously presented) An accommodating lens according to Claim 112, wherein the outer ends of the extending portions can move anteriorly and posteriorly relative to the optic.

116. (previously presented) An accommodating lens according to Claim 112, wherein internal elastic strain causes the lens to move anteriorly.

117. (previously presented) An accommodating lens according to Claim 112, wherein the optic can move forward and backwards with ciliary muscle contraction and relaxation.

118. (previously presented) An accommodating lens according to Claim 117 wherein the optic can move along the axis of the eye relative to the outer ends of the extending portions.

119. (previously presented) An accommodating lens according to Claim 112, wherein the extending portions are plate haptics.

120. (previously presented) An accommodating lens according to Claim 112, wherein the extended portions are plate haptics with hinges.

121. (previously presented) An accommodating lens according to Claim 112, wherein constriction of the ciliary muscle produces forward movement of the lens optic within the capsular bag toward the iris for near vision.

122. (previously presented) An accommodating lens according to Claim 112, wherein the extending portions comprise four diametrically opposite structures.

123. (previously presented) An accommodating lens according to Claim 112, wherein two or more extending portions comprise plate haptics with a groove across the plate haptic adjacent to the optic.

124. (previously presented) An accommodating lens according to Claim 112, wherein the extending portions have knobs at the corners of the distal ends.